Short-Term Solutions

The Commission is seeking ways to immediately help customers cope with rising electric costs. These should be solutions that can be initiated quickly—within a six-month time frame—and have a noticeable impact in lowering energy bills.

A major caveat to our responses is that we have concerns about the six-month timeframe. While we recognize that this schedule is to correspond with the end of the transition period and the beginning of a new set of rate structures, six months is too short a time period to develop and implement programs that address these issues effectively. Therefore, we recommend more emphasis on longer term strategies as described below in the section on "long-term solutions."

Consumer Education

1. What types of programs could be introduced in Illinois to provide consumers the tools and information they need to better monitor, manage and control their electricity consumption and thus their energy bills? How should the success of these programs be measured?

A substantial long-term effort is needed to educate consumers about how to manage their energy use and bills. After ten years of a rate freeze, consumers' concerns about their electric bills have atrophied. Overcoming this atrophy will not be possible in a six month time horizon.

To begin to address this issue, effective planning should be the priority over the next six months. Efforts to educate consumers or to develop new programs need clear goals and strategies. These goals can ensure that meaningful educational offerings are tied to cost-effective program offerings.

In addition, it is essential that any energy efficiency or education efforts include a monitoring and evaluation component. These evaluations do not necessarily need to be conducted by a third party, but they should be methodologically valid and the results should be available to relevant parties. Projects should also collect behavioral and attitudinal data, which is critically important information and can be used to inform future program development.

If efforts are to be conducted with the next six months they should at minimum:

- A. Include information about all new rate options and efficiency programs.
- B. Coordinate efforts of various stakeholders.
- C. Recognize that rising prices create a window of opportunity to engage customers in a broader discussion of the impact of energy costs on the environment, economy and sustainability of our society.

- 2. What role should the various stakeholders take in educating consumers? What should that level of effort be?
 - a. Commission
 - b. Utility companies
 - c. State of Illinois
 - d. CUB and other consumer interest groups
 - e. Others

The Cooperative doesn't presume to say what other groups should be doing or not doing. All stakeholders could have a meaningful role in educating consumers, but each organization also has its own interests and constraints that may influence its activities. In the case of the utilities; the IDC rules place an additional constraint on what they can communicate to customers. Regardless of the source, the standard for education that should be met is it needs to provide accurate facts and actionable information for consumers.

3. The Commission is considering initiating a workshop process to provide interested parties with the opportunity to provide input on how educational material should be designed, what topics should be covered and how the materials should be disseminated. Is there value in such a workshop and what specific issues should be addressed? Please explain.

Because Illinois consumers and policy makers have not had to address these issues for a long time there is a significant knowledge gap in Illinois that needs to be overcome. Consequently, such a proceeding would be very valuable. Leading states such as California, Oregon, Wisconsin, Vermont and New York all could provide excellent examples of how state-of-the-art energy education has developed over the past decade. Because there is such a huge learning curve for stakeholders here in Illinois, it is important to start learning about exemplary programs and policies from elsewhere as soon as possible.

There are two issues that should specifically be addressed. First, how to develop a long-term strategy for Illinois to engage residents and businesses on energy issues such as environmental impacts, efficient use, and managing costs. Rather than waiting for a crisis or period of major change, such efforts should be designed to last a number of years. The second issue is how to raise the energy awareness of residents. National surveys show that most Americans do not understand energy issues or their impacts. To successfully engage people on these issues will require increasing their energy awareness level significantly and tying that raised awareness to specific actions and programs.

4. What short-term education efforts are being planned in response to the ComEd rate stabilization docket (06-0411) and the Ameren securitization (06-0448) docket?

No comment.

5. Who should take the lead role in promoting the education effort? Please explain.

As discussed in Short Term Question #2, the Cooperative feels that identifying a lead organization is not practical or necessary at this time. In addition, effective programs cannot be developed and implemented on a six month timeline; attempting to do so will result in poorly planned, non-strategic efforts with little impact.

Identifying a lead organization can help avoid costs associated with duplication of efforts, but there are also benefits to having different organizations involved in the education process. Education is necessary but not sufficient to promote behavioral changes. To be effective, education programs must be carefully developed and designed from a consumer point of view. This is accomplished in part by providing accurate information presented in a useable format. Consumers are also influenced to act when they believe that the source of information is credible. Consumers will react differently to particular corporate or institutional sources of the information. Finally, unless education is tied to specific cost-effective energy-efficiency program opportunities, the effects will be minimal.

6. What programs have other states undertaken to educate consumers on how to deal with high energy bills? How successful are these programs? How is success measured? Which programs are applicable to Illinois?

Many successful campaigns take a multifaceted approach to energy efficiency education. For example, the California's *Flex Your Power Campaign* used media advertising, community partnerships, and school lesson materials to encourage California residents and businesses to conserve electricity during the state's 2001 energy crisis. And the program produced results. By October 2001, conservation and efficiency efforts succeeded in reducing electricity demand by 6,369 megawatts. However, this campaign was also tied to specific financial incentives for consumers. Obviously Illinois does not face the same magnitude of energy crisis that California did in 2001, but the program does suggest that in the face of crisis, an intense, large-scale program can have results with tangible benefits for consumers, and that consumers are not apathetic and inelastic in their energy consumption.

7. What programs have been or are being implemented in other states to mitigate rising energy costs?

States differ significantly in energy costs and regulatory structures. See Long-Term Solutions Consumer Education Question #2.

8. Describe any education efforts associated with demand response, energy efficiency, real-time pricing, LIHEAP and the impending rate increases that are planned or currently underway. Provide all documents associated with the education efforts.

There are a number of individual efforts underway by various organizations and agencies. While these efforts all have good intentions and have been developed based on available resources, there is no central coordination or clearinghouse of information on these efforts that enable consumers to learn more about them. Likewise because they are not coordinated, it is difficult to ascertain what the goals of the programs are, and how their success is being measured and evaluated.

Over the past several years, the Cooperative's primary educational effort has been the promotion of real-time pricing as a tool to incent demand response and to make consumers more aware of their energy use and therefore become more energy efficient. We have had significant success in recruiting participants for the Energy-Smart Pricing Plan SM; all of the funding that was available for the cost of special metering for this program was used. The experiences of our marketing efforts indicate a strong interest in joining this type of program. In providing information to participants, we emphasize energy-efficiency opportunities and energy management options to enable them to reduce their costs and create other benefits to the environment and the electric system. Third-party evaluations of the program have demonstrated that participants do in fact both reduce demand and become more aware of their energy use and more energy efficient in their behavior and purchasing habits. It is clear from this experience that energy education can receive significant attention from consumers and media when it is coupled with economic incentives.

The Cooperative is currently conducting additional survey research that includes questions about interest in real-time pricing. Real-time pricing is a new idea that was unfamiliar to the surveyed households. The survey includes a short, neutral explanation of variable rates compared to fixed rates, and the preliminary results from the ComEd service territory showed that 25% of households would "definitely" or "probably" be interested in taking electric service with a real-time pricing rate. We will provide more information on this research and its results as it becomes available.

We have included some examples of outreach and education materials that we have used. Other materials we have used have been included in the annual reports for Rate RHEP filed with the Commission by ComEd. We also conduct ongoing energy efficiency education for our more than 8,000 members through newsletters and workshops.

9. How well can residential customers get information on their power use in a timeframe in which they can change their behavior? How can this be improved?

This is a fundamental challenge. Unlike almost every other product we consume, electricity (and natural gas) bills arrive after we use the product, and contain little detailed information. As a result they are almost useless as a tool for customers who want to change their usage.

Since bills are the main source of information consumers have about their energy usage, this disconnect makes it difficult for them to understand what could be done to change energy usage. In addition, most electric bills are hard to read and contain obscure line items (for example, very few people in Illinois could explain what an Instrument Funding Charge is, or why it shows up on their bills). Better bill design (as discussed in the Longer-Term Solutions Consumer Education Question #1) would be one starting point, but may be difficult to implement within the next six months.

10. Tell us about existing demand response programs available to electric utility customers in Illinois.

- a. How do they work?
- b. Who is eligible to participate?
- c. How does one enroll?
- d. What are the terms and conditions?

On the residential level there are two programs.

First, there is the residential real-time pricing program that we operate with ComEd under the name Energy-Smart Pricing PlanSM (using ComEd Rate RHEP). This program cuts peak demand by incenting customers to change their usage through price signals. As mentioned in the response to Question #8 above, third party evaluations of this program have found significant demand response. While this is typically measured as an elasticity of demand to price, it is more easily understood in illustrative examples. Last summer on the hottest weekday, July 25, participants as a group cut their peak demand by 15%. For ESPP participants who were equipped with central air conditioner cycling switches, demand was cut by over 20%. Participants find value in ESPP because they receive access to lower priced power during off peak times, and even during onpeak times when demand is relatively low and prices stay low. The combined value of those prices plus the impact of demand response has led to savings for participants.

The program is currently in its fourth year as a pilot and is not taking new enrollments. In ongoing proceedings, continuation and expansion of the program has been proposed for 2007 and beyond.

Second, there is ComEd's Nature First program that also uses cycling of central air conditioners. In this program a switch that ComEd can remotely control is installed on central air conditioners. The switch turns off the air conditioner compressor for short periods of time. Participants are paid an upfront fee on their summer bills regardless of whether or not ComEd uses the program. ComEd is not currently actively marketing Nature First, but it is part of their proposed new rates.

A variety of rates and programs exist for non-residential customers, but most of these will change significantly in 2007, pending the final outcome of ComEd and Ameren's distribution rate cases, which will likely establish new programs.

11. Tell us about existing energy efficiency programs available to electric utility customers in Illinois.

- a. How do they work?
- b. Who is eligible to participate?
- c. How does one enroll?
- d. What are the terms and conditions?

Similar to the education efforts described in Question #8 above; there are and have been some energy efficiency efforts underway. For residential customers, these have primarily been specific campaigns focused on promoting compact fluorescent light bulbs and other products. While these individual strategies can and do create opportunities for individuals to invest in energy efficiency and result in reduced energy use, the absence of an overall strategic framework and commitment to energy efficiency in Illinois means that these programs tend to be very short-term in focus, scattered and without coordination of effort or monitoring and evaluation of results, and not tied to any strategic goals for improving the energy efficiency of Illinois.

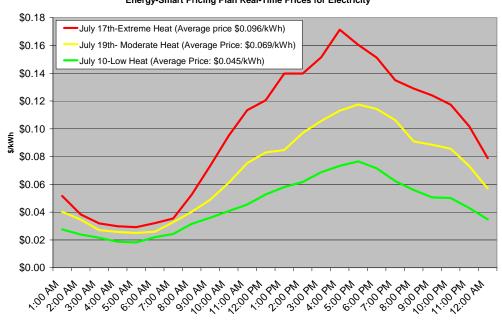
Effective programs require long term commitment, clear goals, and adequate funding. The Community Energy Cooperative is currently developing recommendations about best practices from other states and will share this information with the Commission as it becomes available.

12. What is the marginal cost of air conditioning load during the summer months (June, July, and August)?

- a. How does that marginal cost vary over a day?
- b. How do we convey that cost information to consumers?
- c. What tools do they need to respond to those cost signals?

Due to the current heat wave, this week and last week provided excellent examples of how marginal costs can vary during the summer. The following chart demonstrates the variation in price for ComEd Rate RHEP, which is based upon the PJM day ahead hourly price for the ComEd zone.

Energy-Smart Pricing Plan Real-Time Prices for Electricity



Over the course of a day, regardless of weather, prices vary greatly as demand for electricity rises and falls. Note that while prices rose dramatically on the hottest day of the year, there were many hours on the other two days when prices were very low.

Currently these prices are not visible or relevant to retail customers other than for Energy-Smart Pricing Plan participants; so they do not make consumption decisions based upon actual market prices. The flat, averaged price that most customers pay obscures the relationship between supply and demand that a market-based marginal price produces. In contrast, those households that are receiving information about these prices are changing their energy use to minimize use during the high priced times.

The key tool for creating a response to price signals is a rate that is based these prices such as the current ComEd Rate RHEP or the proposed ComEd Rate BES-H or Ameren Rider RTP/Rider ESP. With such rates and metering capable of recording hourly energy use, the stage is set for customers to respond to price. And they do respond (see the response to Question #10 above). Customers can produce such response through both manual interventions such as changing a setting on a thermostat, or by using automated systems such as air conditioner cycling switches or smart thermostats.

13. Given the short timeframe, what role can digital technology play in enabling consumers to change their behavior? What digital technologies exist that may be implemented in the short-term?

In six months it would be difficult to deploy any significant amount of advanced technologies to enable customers to change their behavior. However, the longer-term potential of such technologies is excellent. For example, all new electric service could be required to have an interval recording meter, or better yet a two way communicating smart meter, installed as a condition of service. Likewise, smart thermostats or other control systems should be considered a requirement of new service. We address these issues further in Longer Term Demand Response Ouestion #3 below.

A short-term solution could be the aggressive effort to publicize market prices of electricity in media venues such as evening TV news reports, along side weather, ozone action alerts, etc.

Low-income Consumer Assistance

- 1. What impact will higher electricity prices have on various income groups?
 - a. What will the overall impact be on households? Small businesses?

Currently the typical household spends 4 to 6% of income on energy. For low income households it's significantly higher, between 13-20% according to the *Affordable Energy Plan* (Illinois Affordable Energy Campaign, 2004), and even higher for the poorest of the poor. Therefore an increase in energy costs will impact these households more. For more information

on the burden of energy costs for low-income households see the "Home Energy Affordability Gap" study by Rodger Colton at: http://www.fsconline.com/work/heag/heag_2005.htm.

Using the 2005 data from the ICC comparisons of electric and gas sales reports, typical customers of Peoples Energy and ComEd would spend \$1,623 on natural gas, and \$772 on electricity. If they make \$18,000 per year that would be an energy burden of 13.3% of their income; while if they made \$50,000 it would be just 4.8%. If energy prices all rose 30%, then those burdens would rise to 15% and 5.4% respectively. The impact of this increase on the lower income household is disproportionately large and could compromise their ability to pay for other necessities such as food, medicine and shelter.

2. Tell us about LIHEAP.

- a. How much money is available?
- b. Who is eligible to participate?
- c. Will there be more LIHEAP funds available to coincide with the impending rate increases?
- d. What efforts are underway at the state and federal levels to increase LIHEAP funding for low-income customers served by Illinois electric utilities?
- e. How does one go about applying for LIHEAP funds?
 - i. Can the process be streamlined? Explain.

LIHEAP is a valuable program that provides much needed benefits to many low-income households. However, improvements need to be made in two key areas.

First, energy assistance needs to be available to more low-income households. Only about 40% of the eligible households are served by LIHEAP each year, meaning that a significant portion of the population is not served. Non-eligible working poor receive no support (see Question #4 below).

Second, the existing LIHEAP program needs improvement. We have three key concerns regarding LIHEAP:

- The current funding levels are inadequate to serve the need. While some of this is an issue of federal appropriations, Illinois also funds nearly half of its LIHEAP program through a charge on every gas and electric meter. This charge is due to expire at the end of 2007 and it needs to be renewed and the funding levels increased or the ability to help our neediest households will be severely compromised.
- LIHEAP needs to be reformed. The need for this stems from the fact that the current program design uses a formula that is based on income and household size and does not take into account the actual energy bills of recipients. There is a proposal under discussion by the LIHEAP Policy Advisory Committee that would restructure LIHEAP into a percentage of income plan in which the portion paid by recipients would be tied more closely to their ability to pay, resulting in increased affordability for more households and a more effective distribution of the available resources. This model is

gaining in popularity nationally and has a proven track record in other states. There are several versions under discussion. The model proposed by the Department of Healthcare and Family Services is the strongest and would benefit low-income consumers the most. There are a number of other elements to the proposal that would improve the program design and implementation, including more effective energy education. Because discussion of this reform is ongoing, we would be happy to provide more information and details as agreements regarding them are reached.

- While LIHEAP has a weatherization component to it, there has not been any effort to coordinate energy efficiency programs with LIHEAP. Weatherization has a proven track record of significant energy savings but it tends to focus on building envelope (insulation, windows) and on heating systems. Lighting, thermostats and other appliances for low income households need targeting through efficiency programs because these are also significant sources of energy costs. And resources devoted to weatherization need to be increased, as effective energy efficiency investments lead to reduced need for subsidies.
- 3. According to survey information released by the Bureau of Labor Statistics, lower-income households currently pay a disproportionately higher percentage of their income for electricity. How can this be mitigated going forward?
 - a. Should special programs be implemented to alleviate the impact of price increases? Why or why not?
 - b. If yes, what should those programs be?
 - c. What role is there for low-income targeted installation of technologies, *e.g.*, programmable thermostats, price-responsive appliances, digital meters, etc.?
 - d. Would low-interest loans for homeowner insulation, energy-efficient appliances, etc. be worthwhile? Please explain.

With rising electricity rates coming on top of already increased natural gas prices, a new program such as the percentage of income plan mentioned above would be the best way to help low-income consumers manage their increasing bills. In addition, if Illinois were to move to a model of percentage of income for payment, it will be in the state's interest to help control energy use in recipients' houses and the technologies mentioned elsewhere in these questions could be valuable components of such a plan.

The value of low-interest loans depends upon the implementation strategies. The constraints of access to capital vary greatly by income level. In addition, we are coming out of a long period of low interest rates when the marginal value of such programs was reduced. As interest rates rise, such programs could become more attractive to many households. An additional model to consider is an energy efficient mortgage in which the loan is rolled into the mortgage in such a way that the savings in energy costs exceed the increase in the mortgage payment, creating positive cash flow for the homeowner.

We do believe that energy efficiency programs developed in Illinois should pay particular attention to the needs of lower-income households, who most need incentives to be able to take advantage of energy-efficiency opportunities.

- 4. Will the existing energy assistance programs (e.g., LIHEAP) be sufficient to help offset the additional costs incurred by low-income consumers?
 - a. Should additional funding be sought to help low-income consumers?
 - b. If so, what is the best way to use those funds, e.g. bill assistance programs, weatherization, digital thermostats, metering, price-responsive appliances, etc.?

No, existing energy assistance programs are not sufficient. The increases in the price of natural gas over the past several years have more than wiped out the entire value of LIHEAP grants, and an additional increase in the price of electricity will further increase the burden of energy costs for these households. As mentioned above, the legislation authorizing the state supplemental fund needs to be extended and ideally the funding levels increased significantly. Likewise, sufficient funding for efficiency and price responsiveness is essential because such one time investments could permanently reduce the need for LIHEAP grants. LIHEAP currently only deals with energy efficiency through weatherization, which only serves a small portion of households each year, and for which there is a long waiting list. Making LIHEAP customers a priority in any new energy efficiency offerings is essential to helping them survive. In particular, if the state moves to a percentage of income payment plan for LIHEAP, energy efficiency has the additional value of being a cost containment and control strategy for the state.

In addition, there are many households that are eligible for LIHEAP but do not receive benefits, and there are working poor households who don't qualify for LIHEAP but nonetheless have serious difficulties paying their utility bills. These households should not be forgotten in any future program designs.

Longer-term solutions

Consumer Education

- 1. What is the best way to convey to consumers that they have the ability to control their electricity bill, for example by reducing peak load consumption?
 - a. How can this change in behavior be institutionalized?
 - b. Should financial incentives be given to customers to reduce their peak load consumption?
 - c. How should the information about hourly prices be conveyed to consumers? Who should be responsible for providing that information? Can this information be easily provided? Why or why not?

A key principle to adopt would be openness and transparency of information. Even before getting to *how* to convey information to consumers, in reviewing these questions it is clear that there are significant data and information gaps. Utilities know a lot about their customers and usage trends, but that information is not available to other policy makers. The information contained in the ICC annual sales reports is very aggregated, and of limited value. We propose the creation of the "Illinois Energy Information Bureau" to collect, analyze and disseminate

information about energy use, prices, trends, etc. A model for this could be the "LIHEAP database" formerly administered by the Illinois Department of Natural Resources. With such a resource, it would be easier to understand energy use and behavior at various levels of geography, social and economic circumstance, etc. The development of programs to benefit consumers would be improved by access to such information.

As mentioned above, better bill design could be one avenue into better information for consumers. One example is a pilot program run by Wisconsin Public Service that used the work of Nexus Energy Software to design new bills that convey more information and context about energy use to consumers and allows them to compare their use to others. Such bills have designed into them connections to online tools that allow the consumer to better understand their energy use through audit tools. Compared to many online energy audits that can be daunting to the consumer, this method, by using the bill as the starting point for engagement, is a much more customer-friendly method and one that is more likely to result in changing consumer usage. For more information, see the following presentation:

www.mwalliance.org/energypros/activities/conference/2005/documents/RichardHuntley.pdf as an example.

While this model is useful for engaging consumers on the basis of their monthly kWh usage, if consumers take the step of signing up for real-time pricing, it is then possible to engage consumers on their hourly energy use so as to let them tie their consumption habits and changes in behavior more closely to their energy use. Such information is far too detailed to easily be conveyed on paper bills or statements and inherently lends itself to online presentation. For the past three and half years the Community Energy Cooperative has provided such information to participants in the Energy-Smart Pricing Plan. See: www.energybilldata.com (login: guest; password: guest1) for a demonstration. The Cooperative also uses tools such as blast phone calling and emails to convey information about times of unusually high prices, and is piloting more advanced methods such as the PriceLight described below in Long-Term Solutions Energy Efficiency Question #4.

Finally, consumers should get incentives to reduce their peak demand because doing so improves the reliability and efficiency of the entire electric system and can lower costs for everyone. We believe that there are two key ways to do this. First, make a real-time hourly pricing program available to all. Part of the cost of this program should be embedded in the electricity distribution system, because developing the capacity and the incentive for peak load reductions is a system management function. Once the system is in place, consumers have the incentive to change their behavior and their use in response to price, and our experience shows that they will do so. Second, provide incentives for allowing the utility to control energy use so that customers will volunteer for such load control. ComEd already does this in the Nature First program. The principle is sound and should bring benefits to the system as a whole.

2. What education programs are being implemented in other states to inform consumers about the long-term impact of programs designed to mitigate rising energy costs?

Education efforts that have been conducted in other states may have limited value for Illinois for two reasons. First, Illinois has had the longest and largest rate freeze, therefore the disconnection between current rates and futures rates is particularly exacerbated here. Second, because Illinois has not had substantial education efforts in the past, introducing such efforts in a planned, coordinated and extensive manner will be a significant challenge in itself.

3. What long-term education efforts are being planned in response to the ComEd rate stabilization docket (06-0411) and the Ameren securitization (06-0448) docket?

No Comment.

Demand Response

1. What is the best way to incent customers to reduce peak-load consumption? Please explain.

There are numerous ways to incent customers. For some customers, the simplicity of an upfront payment for having an air conditioner cycling switch is attractive. For other customers, real-time pricing has proven to be an excellent way to reduce peak load, invest in energy efficiency, and to save money. For other customers, rebates on appliances will be a motivating influence. Illinois will be best served by having a robust, consistent and adequately-funded menu of options available to customers.

That being said, a critical long term solution is to engage customers about the real price of electricity, convey how people consume it during peak times, and to give them the tools to change. If properly designed, many consumers will invest their own funds in energy efficiency. Funding to create that level of engagement is essential for the long-term realignment of incentives for energy management.

- 2. There are a number of mechanisms available to help customers reduce their demand for electricity. Please comment on the economic, operational and reliability costs and benefits associated with the following:
 - a. Rate design
 - b. Information and metering
 - c. Demand management
 - d. Distributed generation

These are complex questions that we have answered in part in other portions of our responses. If the Commission would like to explore these issues further, we can provide more information as needed.

3. What role can technology play in enabling residential demand response?

The experience of the Energy-Smart Pricing Plan indicates that special technology is not essential to get customers to respond to price signals. A good rate structure, timely and useful information about prices and strategies to reduce consumption are the most important tools. However, the results of both ESPP and of California's Critical Peak Pricing pilot program indicate that responses will increase if a portion of the demand response (especially air conditioner load) is automated. An emerging area of research that could expand the potential role of technology is the idea of grid-friendly appliances that can take signals transmitted over power lines and use them to control or curtail usage. Early pilot programs are underway in the Pacific Northwest based on this concept.

The other aspect of technology is the evolution of meters from electro-mechanical meters to solid state meters. The idea of measuring energy use by spinning a disk around and around and counting how many revolutions are made is 19th century technology. The 21st century calls for the use of smart meters and digital technology that record energy use in small blocks, and that make many days, weeks or even months of data available. Smart meters also have the potential for two-way communications, meaning that the utility can query a meter in real time and find out what is happening at an individual home or business. This could have a significant impact on outage reporting, grid management, etc. And of course, such detailed data is essential for recording and measuring the impact of demand response.

Eventually, an advanced metering infrastructure using smart meters will be commonplace, but each utility will need to develop its own plans and strategies for moving toward this vision. As noted above, phasing in smart meters in all new installations would be an easy starting point.

Energy Efficiency/Conservation Initiatives

- 1. How have residential consumer consumption patterns changed over the last ten vears?
 - a. Residential consumers continue to acquire more and more electronic appliances and gadgets. How has the increased reliance on electronics altered consumption trends?
 - b. Are there noticeable trends based on income class?

One critical factor in consumption patterns has been the saturation of central air conditioning in new construction. It is standard building practice today to include central air conditioning, and this has significantly increased in peak demand. As of 2005, 89% of new homes are built with central air conditioning, compared to 36% in 1971. Additionally, in the same time period, the average new home size has also increased from 1,520 sq ft to 2,434 sq ft even as household size has decreased. In 1986, 7% of new homes were larger than 3,000 sq ft compared to a rate of 23% in 2005 (National Association of Home Builders, 2006). Many homes over 3,000 sq ft are built with multiple heating and cooling systems.

Two other emerging trends are the changes in television technology and phantom or ghost loads. Plasma TVs use significantly more energy than conventional TVs, but LCD TVs are more efficient. It is not clear yet which technology will prove most popular as Americans move to HDTV over the coming years, but the technology choice here could have an impact on electricity usage.

As we add more appliances, we add more appliances that draw power even when they are not on or not being actively used (referred to as ghost load). This means that even when we are not home, our home's base energy use is increasing.

While these are overall trends we know have an impact on consumer energy use, we do not have specific or detailed information on household energy trends in Illinois, which types of consumers are increasing their use and by how much. The availability and analysis of such information, through a mechanism such as the Energy Information Bureau that we propose in Longer Term Solutions Consumer Education Question #1, would be extremely valuable in understanding these trends and effective energy efficiency strategies to address them.

2. What is the consumption trend for commercial/small industrial customers?

We have not studied this issue.

3. How can pricing signals or changes in rate design be implemented to provide a more timely information flow to the customer and how should that timeliness be accomplished? How important is the timing of the information flow? Please explain.

The Cooperative has had the opportunity to study the impact of price signals on a group of consumers using an experimental rate (Residential Hourly Energy Pricing) over the past four years. Through this program (the Energy-Smart Pricing Plan), consumers have access to two types of information: energy prices and energy usage. Price information is provided on a dayahead basis, and usage information is measured each hour and summarized, through the use of a solid state interval recording meter. However, this usage information is not available at the time of use. It can only be reviewed after the monthly billing cycle is complete.

The ESPP program has demonstrated that consumers can successfully respond to pricing signals. While these participants have access to information on hourly energy prices, frequent monitoring of this information is not essential. In our program we have emphasized information about standard daily and seasonal price patterns, and this understanding by consumers is sufficient to allow them to manage their use on a daily basis. Timely information about high electricity prices during peak usage hours is essential, but can be provided through traditional communication channels (phone and email). Additional information could be provided in real-time by more sophisticated equipment and information technologies, but the ESPP program has proven that less complicated and lower cost methodologies work.

- 4. What role could digital technologies play in promoting conservation?
 - a. What are the benefits of such technologies?
 - b. What are the costs of implementing such technologies?

Technologies that bring real time information about use and energy prices into the home and enable consumers to monitor their energy use in real time is available and has been utilized in pilot programs (e.g., CA). However, these technologies are costly. Further evaluation of the cost/benefit ratio of employing these technologies is warranted.

The Community Energy Cooperative is currently testing one such product, the PriceLight (also known elsewhere as the Ambient Energy Orb) this summer. The PriceLight is a small lamp that—when plugged in—changes color via a pager signal to reflect the hourly price of electricity. Initial findings are that the Orb is immensely popular, but our study participants have not been exposed to the actual costs of purchasing and maintaining this equipment. At this point in time, this technology only reflects the price of power, not actual consumption. There are other devices for sale that allow real-time monitoring of energy consumption, but in our view these products still need further refinement before wide-scale roll out. They should be considered for pilot programs to further explore their usefulness.

- 5. Should utility companies be actively promoting energy conservation programs? Why or why not?
 - a. Who should be the recipients of those programs?
 - b. How should the costs associated with those programs be recovered?

The first critical step is for Illinois to establish long-term, consistent commitment to creating and funding energy efficiency programs. Only once we've made that commitment can we ask how to administer them. There are several different models in use in different places, each with its own advantages and disadvantages.

Therefore, this question cannot be answered without a careful and extensive evaluation of a number of criteria that are specific to Illinois and its utilities. A comprehensive discussion of the role of utilities versus other entities (e.g., state agencies, not-for-profit corporations) providing these services can be found in a Center for the Study of Energy Markets (CSEM) Working Paper Series publication, *Who should administer energy-efficiency programs?* by C.Blumstein, C.Goldman, and G.Barbose. They note that "no single administrative structure for energy-efficiency programs has yet emerged in the US that is clearly superior."

Whatever the entity that administers such programs, it is essential, as we have noted several times previously in these responses, that there be clear strategic goals for such programs, and that there be monitoring and evaluation to learn as much as possible and enable continuous improvement in their implementation. It's important that we learn from the most effective programs in other locations, and it's equally important that we experiment and innovate to develop new approaches that can be effective in Illinois. It's essential that programs not be designed as individual, isolated activities, but coordinated and managed to get maximum

synergies from them. These programs should be administered in a way that makes these conditions possible.

There are different types of programs that could be directed to different types of consumers. In general, programs should be focused to 1) get the biggest impact for the investment; 2) target populations where additional incentives are needed to get results or there is particular economic need. For example, multifamily buildings tend to have split incentives—it would be cost effective overall to invest in energy efficiency, but because bills are paid by tenants and costs of efficiency are born by landlords, incentives are needed to make efficiency measures happen. At the same time, this sector represents a large opportunity for efficiency, while bringing additional benefits (such as making rental housing more affordable), and so represents a very appropriate focus for targeted energy efficiency.

By whatever mechanisms these programs are administered, we believe that utilities, because of their ongoing relationship with consumers, have an important role to play in promoting these efforts.

Both energy efficiency and demand reduction represent investments that benefit all consumers in the long run, not simply those making the investments and changing their energy behavior. Therefore we believe that mechanisms should be developed to fund these programs through either inclusion in rates themselves, or as community benefits charges added to all consumers' bills.